

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (currently amended) An array of protein-binding agents stably attached to the surface of a solid support, said array comprising:

a solid substrate having a substantially planar surface comprising a non-native oxide-coated metal;

a plurality of different protein-binding agents bound to said substrate, each of said protein-binding agents comprising,

an anchoring segment stably bound to the substrate surface,

a peptidomimetic protein-binding segment, and

a linker segment connecting and separating the anchoring and peptidomimetic segments.

2-20. (cancelled)

21-52. (previously cancelled)

53. (cancelled)

54. (previously cancelled)

55. (new) The array of claim 1, wherein said substrate comprises a layer of the metal formed on a non-metal base material.

56. (new) The array of claim 55, wherein said non-metal base material is glass.

57. (new) The array of claim 56, wherein said metal is aluminum.

58. (new) The array of claim 57, wherein said oxide is SiO₂.

59. (new) The array of claim 58, wherein said SiO₂ is about 200 to 900Å thick.

60. (new) The array of claim 59, wherein said oxide-coated metal substrate surface further comprises an organic chemical modification layer between the oxide and the protein-binding agents.
61. (new) The array of claim 60, wherein said organic chemical modification layer comprises an aminosilane.
62. (new) The array of claim 61, wherein said aminosilane is functionalized with a maleimide.
63. (new) The array of claim 62, wherein said peptidomimetic segment is a peptoid.
64. (new) The array of claim 63, wherein said linker segment is selected from the group consisting of C2 - C100 aliphatic chains, polyethylene oxide, an orthogonal peptidomimetic or peptide oligomers.
65. (new) The array of claim 64, wherein said anchoring segment is a thiol.
66. (new) The array of claim 61, wherein said aminosilane is functionalized with an agent selected from the group consisting of hydrazide, aminooxy, N-hydroxysuccinimide, anhydride, aldehyde, disulfide, thiol, azide and phosphine.
67. (new) The array of claim 61, wherein said aminosilane is functionalized with an avidin protein.
68. (new) The array of claim 67, wherein said anchoring segment is biotin.
69. (new) The array of claim 1, wherein said solid support comprises a silicon dioxide-coated aluminum layer on a substantially planar glass surface, the silicon dioxide being modified with a heterobifunctional maleimide-functionalized aminosilane, and wherein said plurality of different protein-binding agents bound to said substrate each comprises,

a thiol substrate anchoring segment stably bound to the maleimide-presenting substrate surface,

a peptoid protein-binding segment, and

an aliphatic linker segment connecting and separating the anchoring and peptidomimetic segments.

70. (new) The array of claim 69, wherein said maleimide-functionalized aminosilane comprises succinimidyl 4-(N-maleimidomethyl)-cyclohexane-1-carboxylate.

71. (new) The array of claim 1, wherein said solid support comprises a silicon dioxide-coated aluminum layer on a substantially planar glass surface, the silicon dioxide being modified with a heterobifunctional avidin-functionalized aminosilane, and wherein said plurality of different protein-binding agents bound to said substrate each comprises,

a biotin substrate anchoring segment stably bound to the avidin-presenting substrate surface,

a peptoid protein-binding segment, and

an orthogonal peptide linker segment connecting and separating the anchoring and peptidomimetic segments.

72. (new) The array of claim 19, wherein said avidin-functionalized aminosilane or aminothiols comprises an NHS-6-aminohexanoyl-6-aminohexanoyl-biotin moiety.

73. (new) A kit for use in performing a differential binding assay, said kit including an array comprising:

a solid substrate having a substantially planar surface comprising a non-native oxide-coated metal;

a plurality of different protein-binding agents bound to said substrate, each of said protein-binding agents comprising,

an anchoring segment stably bound to the substrate surface,

a peptidomimetic protein-binding segment, and

a linker segment connecting and separating the anchoring and peptidomimetic segments.

74. (new) The kit of claim 73, wherein said substrate comprises a layer of the metal formed on a non-metal base material.

75. (new) The kit of claim 74, wherein said non-metal base material is glass.

76. (new) The kit of claim 75, wherein said metal is aluminum.
77. (new) The kit of claim 76, wherein said oxide is SiO_2 .
78. (new) The kit of claim 77, wherein said SiO_2 is about 200 to 900Å thick.
79. (new) The kit of claim 78, wherein said oxide-coated metal substrate surface further comprises an organic chemical modification layer between the oxide and the protein-binding agents.
80. (new) The kit of claim 79, wherein said organic chemical modification layer comprises an aminosilane.
81. (new) The kit of claim 80, wherein said aminosilane is functionalized with a maleimide.
82. (new) The kit of claim 81, wherein said peptidomimetic segment is a peptoid.
83. (new) The kit of claim 82, wherein said linker segment is selected from the group consisting of C2 – C100 aliphatic chains, polyethylene oxide, an orthogonal peptidomimetic or peptide oligomers.
84. (new) The kit of claim 83, wherein said anchoring segment is a thiol.
85. (new) The kit of claim 80, wherein said aminosilane is functionalized with an agent selected from the group consisting of hydrazide, aminooxy, N-hydroxysuccinimide, anhydride, aldehyde, disulfide, thiol, azide and phosphine.
86. (new) The kit of claim 80, wherein said aminosilane is functionalized with an avidin protein.
87. (new) The kit of claim 86, wherein said anchoring segment is biotin.
88. (new) The kit of claim 73, wherein said solid support comprises a silicon dioxide-coated aluminum layer on a substantially planar glass surface, the silicon dioxide being modified with a heterobifunctional maleimide-functionalized aminosilane, and wherein said plurality of different protein-binding agents bound to said substrate each comprises,


a thiol substrate anchoring segment stably bound to the maleimide-presenting substrate surface,

a peptoid protein-binding segment, and

an aliphatic linker segment connecting and separating the anchoring and peptidomimetic segments.

89. (new) The kit of claim 88, wherein said maleimide-functionalized aminosilane comprises succinimidyl 4-(N-maleimidomethyl)-cyclohexane-1-carboxylate.

90. (new) The kit of claim 73, wherein said solid support comprises a silicon dioxide-coated aluminum layer on a substantially planar glass surface, the silicon dioxide being modified with a heterobifunctional avidin-functionalized aminosilane, and wherein said plurality of different protein-binding agents bound to said substrate each comprises,

 a biotin substrate anchoring segment stably bound to the avidin-presenting substrate surface,

a peptoid protein-binding segment, and

an orthogonal peptide linker segment connecting and separating the anchoring and peptidomimetic segments.

91. (new) The kit of claim 90, wherein said avidin-functionalized aminosilane or aminothiols comprises an NHS-6-aminohexanoyl-6-aminohexanoyl-biotin moiety.